

Magn. Reson. Discuss., author comment AC4
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Reply on RC2

Tom Barbara

Author comment on "The Lindbladian form and the reincarnation of Felix Bloch's generalized theory of relaxation" by Thomas M. Barbara, Magn. Reson. Discuss., <https://doi.org/10.5194/mr-2021-50-AC4>, 2021

I will add one more comment about Paul Hubbard with interesting history. When I got to Stony Brook, Charlie Springer approached me about double quantum coherences in isolated ^{23}Na NMR in isotropic solutions. Gerry Harbison was also there and both Gerry and I were doubtful because we were sure that you needed a bilinear term in the Hamiltonian etc etc. for double quantum effects. But later that night, I recalled some parts of Hans Spiess's review article and I came in the next day and told Charlie that relaxation can produce these coherences and that I would work it all out if he was interested, and of course he was. The reason Charlie was interested was that he was reviewing a paper by Jim Pekar and J.S. Leigh on this topic and had a long time interest in ^{23}Na NMR. When Charlie showed me that paper, I saw that the first reference was P.S. Hubbard JCP 53 985 (1970), and I thought "oh of course!". Charlie, Bill Rooney and I wrote up a nice JACS paper on two quantum coherence in ^{23}Na , but much to my chagrin, since I was the "theory guy", a similar effort was published prior in JCP by Wimperis and Bodenhausen. Another interesting aspect was on the experimental side. The spectrometer at Stony Brook was a venerable NT300 four phase system and since I had built a spectrometer at Columbia, I was always interested in multipulse tune up sequences. With these we could test and trim the 90 degree phase shifts and obtain very clean separations.